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# DINOSAURS!

•DISCOVER THE GIANTS OF THE PREHISTORIC WORLD•

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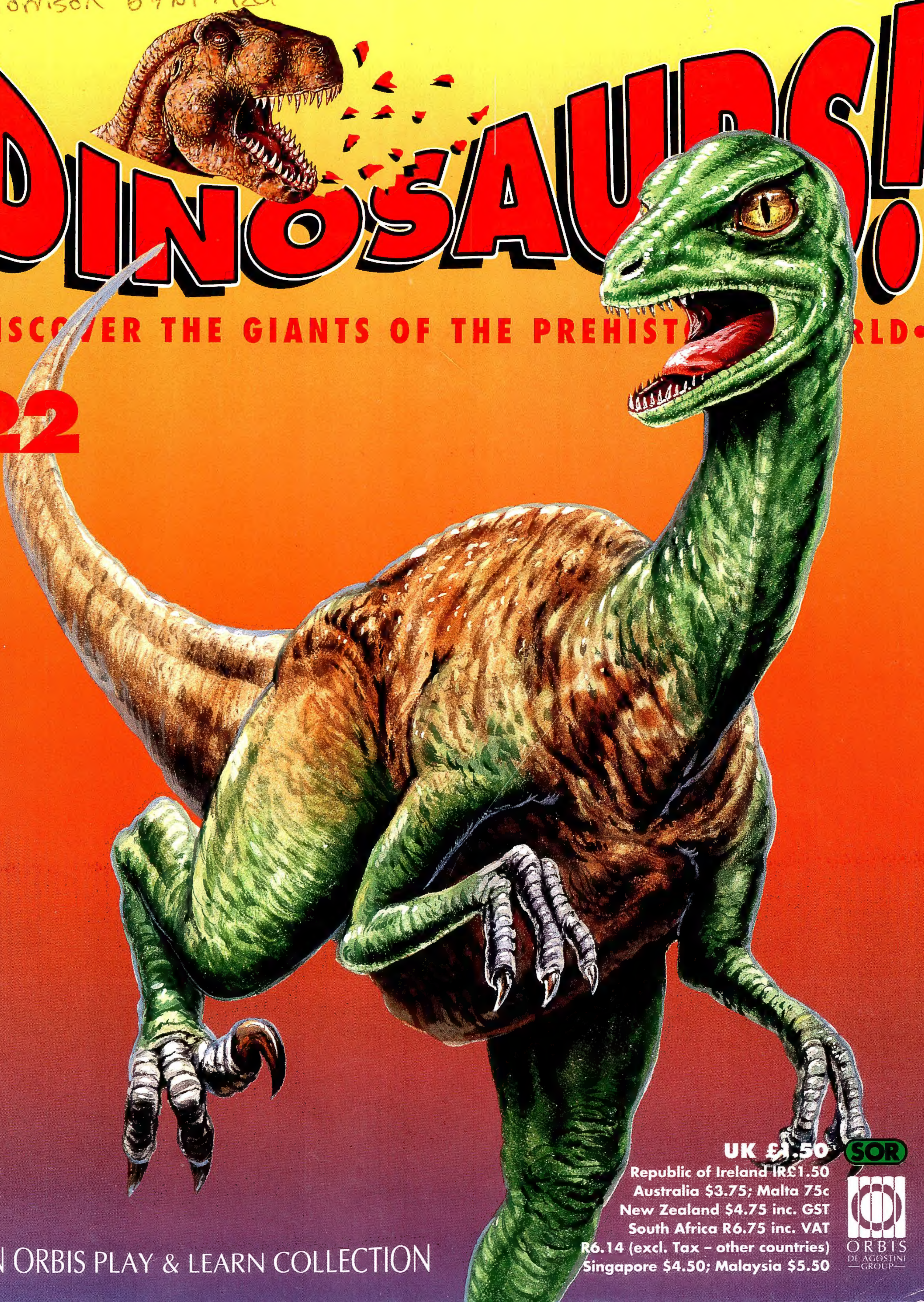

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# DINOSAURS!

**• DISCOVER THE GIANTS OF THE PREHISTORIC WORLD •**

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# TROODON

**Keen-eyed *Troodon* was one of the brainiest of all dinosaurs.**

About the size of a cheetah, *Troodon* was a very skilful hunter. It preyed upon small mammals and young or weak dinosaurs and could attack them with lightning speed.

### BIG BRAIN

*Troodon* had a large brain for its size. The part of its brain that controlled its hands and eyes was especially well-developed, which made it a deadly hunter. As soon as it spotted prey, *Troodon's* brain sent messages to its hands which reached out to grab the prey.

### QUICK THINKER

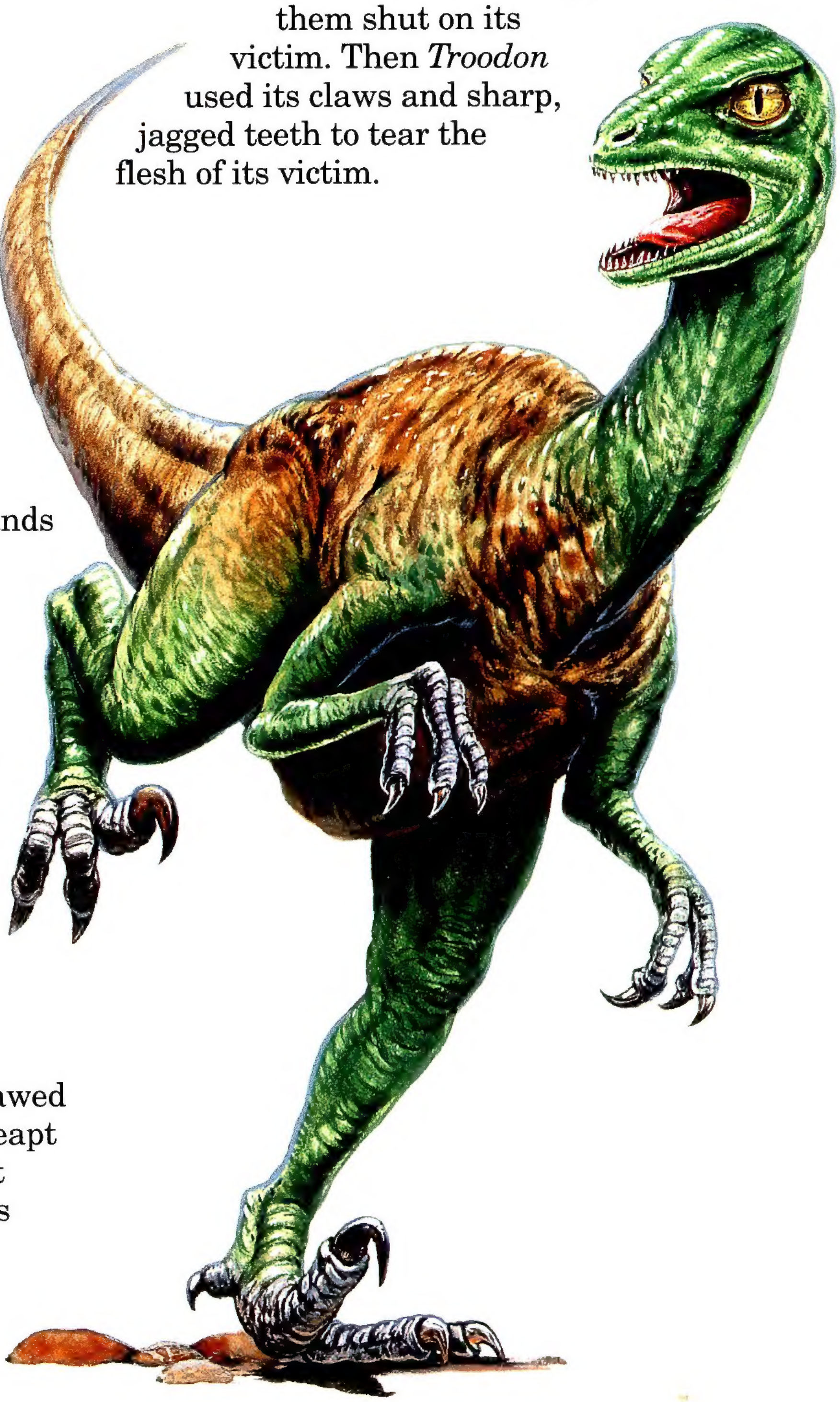
*Troodon* also used its brainpower to react quickly to danger. This gave it a great advantage over bigger predators. Whether it was pursuing prey or avoiding enemies, *Troodon* responded to what it saw with great speed. Its main enemies were the huge hunters *Tyrannosaurus rex, Dryptosaurus* and *Albertosaurus.*

### GRASPING CLAWS

*Troodon* had long arms and slender, clawed fingers. Once it saw its prey, *Troodon* leapt along on two strong bird-like legs. As it neared its victim it reached out with its long arms. It could grab and hold a wriggling mammal quite easily with its strong, grasping hands.

### SLIM JAWS

Along the length of its slim jaws, *Troodon* had small, pointed teeth. It opened its jaws wide, and snapped them shut on its victim. Then *Troodon* used its claws and sharp, jagged teeth to tear the flesh of its victim.



When the Moon was up, *Troodon* went hunting. Its eyes were probably like a cat's. The slit-like pupils opened up to let in as much light as possible. This helped *Troodon* to see in the dark.

*Troodon's* eyes faced forward like a cat's. This helped it to judge how quickly it needed to move when it was stalking small, nocturnal mammals.

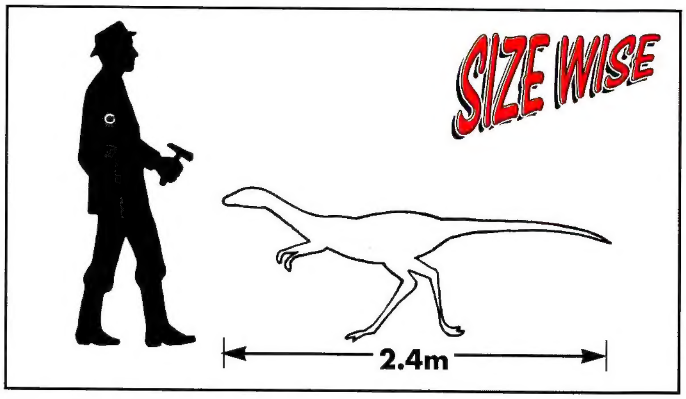
## TWILIGHT ZONE

Night was a dangerous time for *Troodon's* prey. As darkness came, shadowy shapes appeared in the gloom, rustling through the undergrowth. It was difficult to tell friend from foe in the darkness. But *Troodon's* large, saucer-like eyes gave it amazingly keen eyesight and it was able to see its prey in the dark.

*Troodon* was able to hunt by day or night, moving stealthily through the vegetation to track down its prey very easily. *Troodon* used its wide-set eyes like binoculars to see far into the distance.

## MONSTER FACTS

- **NAME:** *Troodon* (troo-o-don) means 'wounding tooth'
- **SIZE:** 2.4m long
- **FOOD:** meat
- **LIVED:** about 75 million years ago in the Late Cretaceous Period in Alberta, Canada and Alaska, Montana, Wyoming, USA



## ONE TOOTH

For many years everything known about *Troodon* was based on the discovery of just one tooth! At first *Troodon* was confused with other dinosaurs such as the thick-skulled pachycephalosaurs.

## BIRD-LIKE

In 1987 a scientist discovered that the tooth was the same as the teeth of *Stenonychosaurus,* a bird-like dinosaur. Since then, *Troodon* has been grouped with bird-like carnivorous dinosaurs.

## SICKLE TOE

*Troodon* had another weapon on its bird-like foot. On its second toe there was a curved claw that stood upright. When *Troodon* swung its foot backwards and forwards, this claw became a sharp, slashing weapon.

## EASY PICKINGS

*Troodon* never missed the chance of an easy meal. Scientists think that it hovered around the nesting sites of other dinosaurs in the hope of picking off young dinosaurs that were left unattended by their parents.

## Is it true that some dinosaurs could see in the dark ?

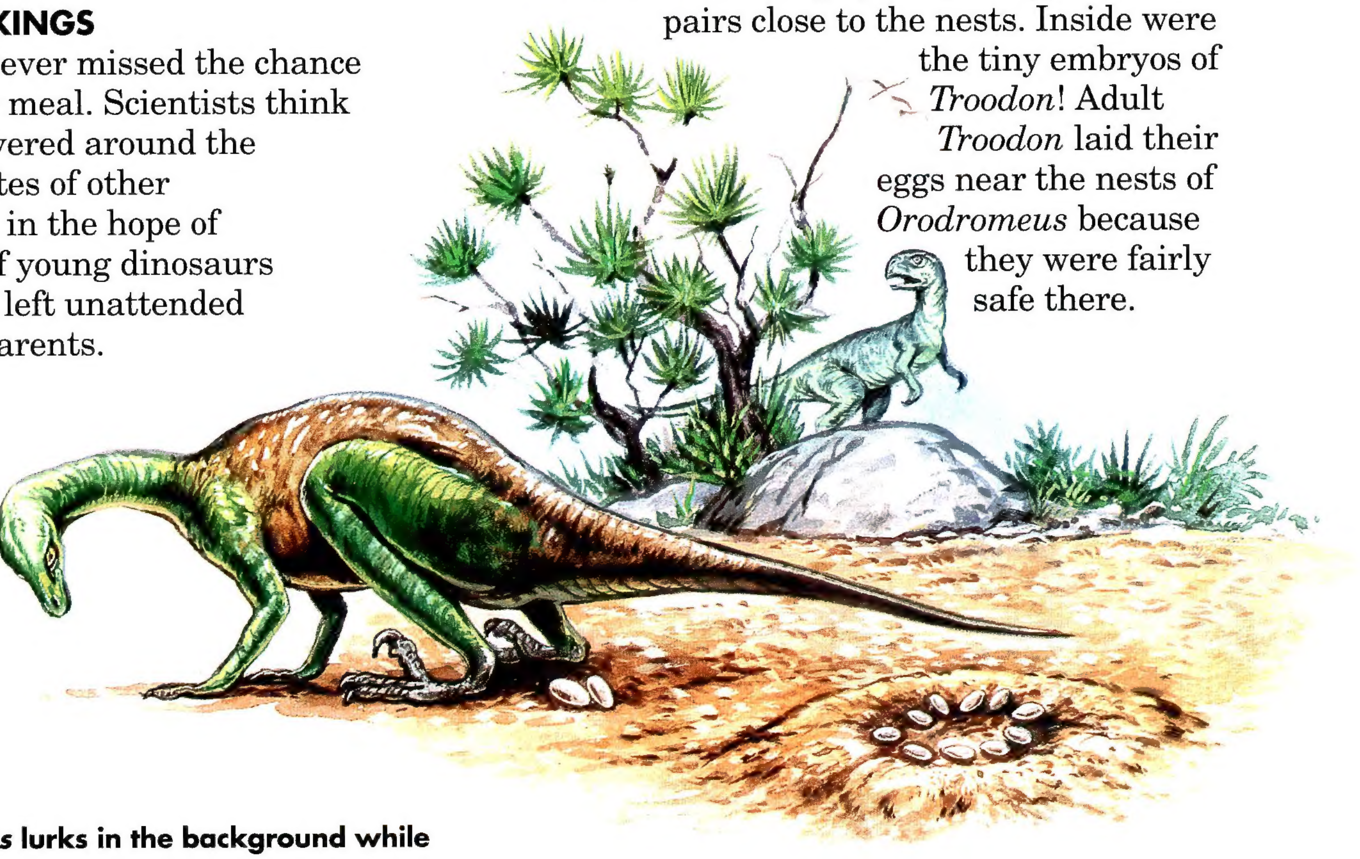
It is likely that big-eyed dinosaurs like *Troodon* could see at night. Living animals like cats have large eyes with slit-shaped pupils which open up in the dark so that they can see better. *Troodon* probably had the same sort of eyes.

## UNLUCKY FOR SOME

Palaeontologists have discovered parts of the skeletons of several *Troodon* very near the nesting sites of *Orodromeus.* The young *Orodromeus* had little chance of escaping *Troodon's* claws and teeth.

## EGGSTRA SAFE

*Troodon* also had the cheek to lay its own eggs near *Orodromeus'* nests. Scientists discovered strangely shaped eggs laid in pairs close to the nests. Inside were the tiny embryos of *Troodon*! Adult *Troodon* laid their eggs near the nests of *Orodromeus* because they were fairly safe there.



***Orodromeus* lurks in the background while *Troodon* lays eggs near her nest. *Troodon* laid clutches of two eggs side by side.**

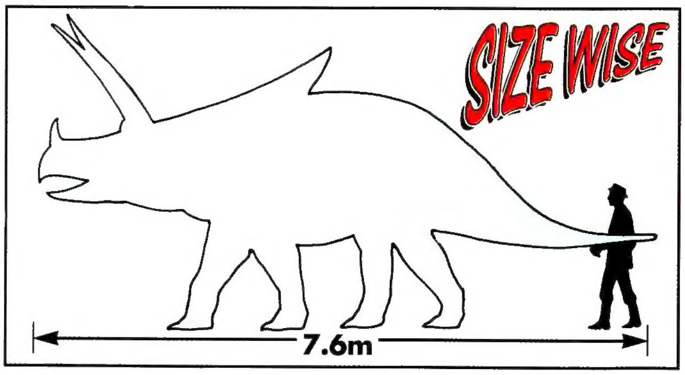
# TOROSAURUS

**Horned *Torosaurus* had the biggest head of any known land animal. Its skull was longer than a small car.**

When *Torosaurus* lowered its massive head its magnificent head frill stood up and made the dinosaur seem even bigger than it was. With its frill raised *Torosaurus* could be seen from a long way off. This dinosaur was as long as an elephant and weighed more than five rhinoceroses. It walked on all fours and fed on low-growing plants.

### BROW HORNS

Although *Torosaurus*' skull was 13 times bigger than a human's, it had a small brain. But with its outstanding frill, large pointed horns above each eye and smaller horn at the end of its snout, it was very well equipped against even the largest dinosaur predators.

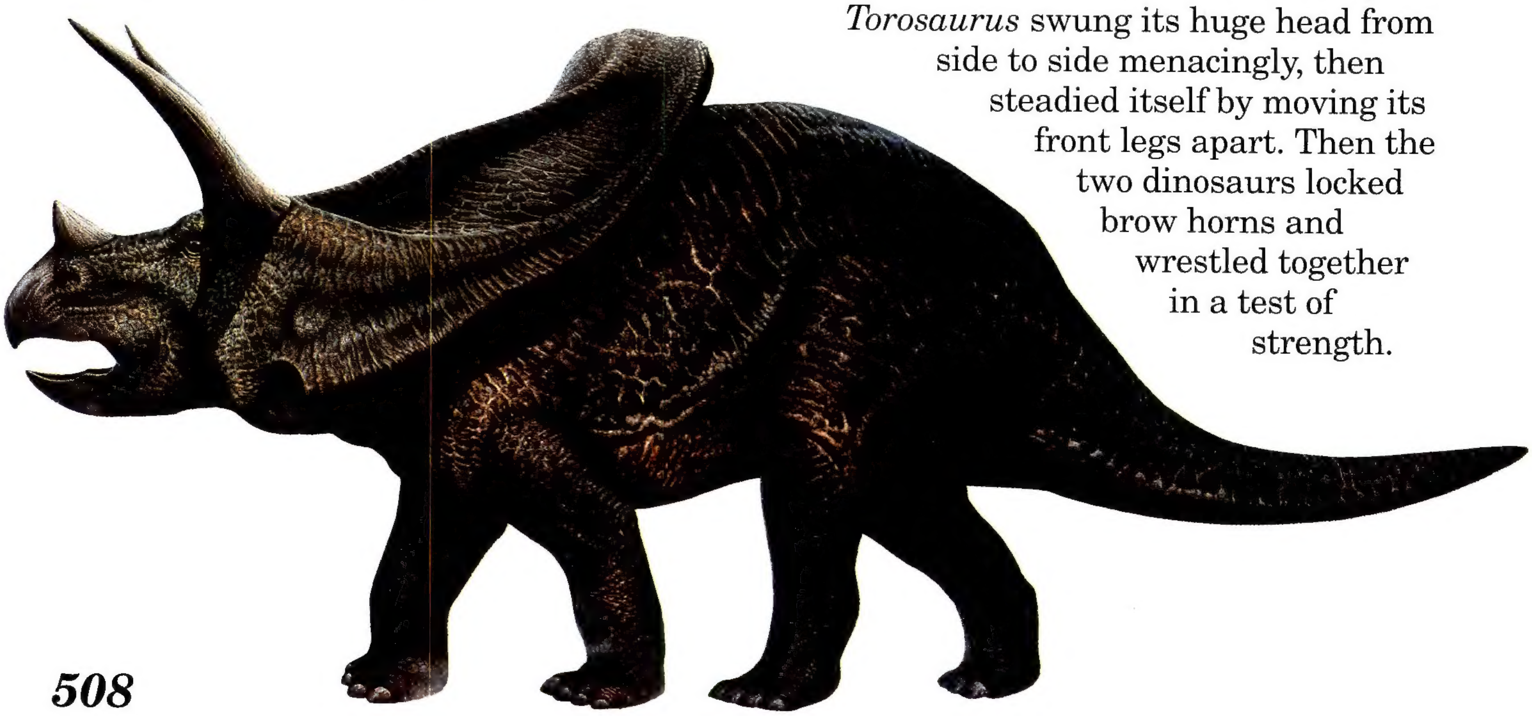


## MONSTER FACTS

- **NAME:** *Torosaurus* (tor-oh-saw-rus) means 'bull reptile'
- **SIZE:** 7.6m long
- **FOOD:** plants
- **LIVED:** about 70 million years ago in the Late Cretaceous Period in North America

### IN COMBAT

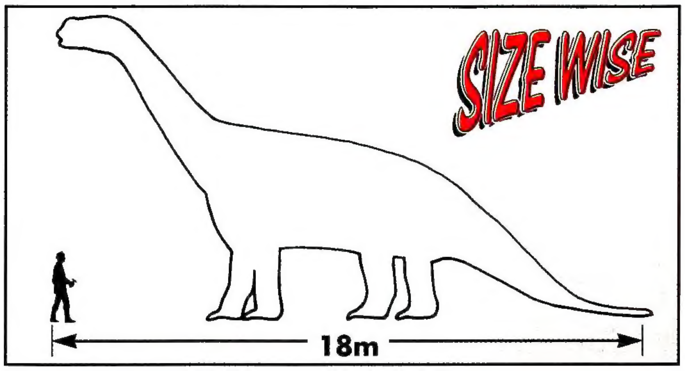
When it came face to face with a rival, *Torosaurus* swung its huge head from side to side menacingly, then steadied itself by moving its front legs apart. Then the two dinosaurs locked brow horns and wrestled together in a test of strength.



# CAMARASAURUS

***Camarasaurus* was longer than a lorry and as heavy as three elephants.**

With legs as thick as tree trunks, plant-eating *Camarasaurus* had sturdy support for the massive weight of its body. Its neck was much shorter than other sauropods, such as *Brachiosaurus*. It probably fed on the lower branches of trees, leaving the topmost shoots to its taller relatives.



## MONSTER FACTS

- **NAME:** *Camarasaurus* (kam-ar-a-saw-rus) means 'chambered reptile'
- **SIZE:** about 18m long
- **FOOD:** plants
- **LIVED:** about 145 million years ago in the Late Jurassic Period in Colorado, USA

### STRONG SENSE OF SMELL

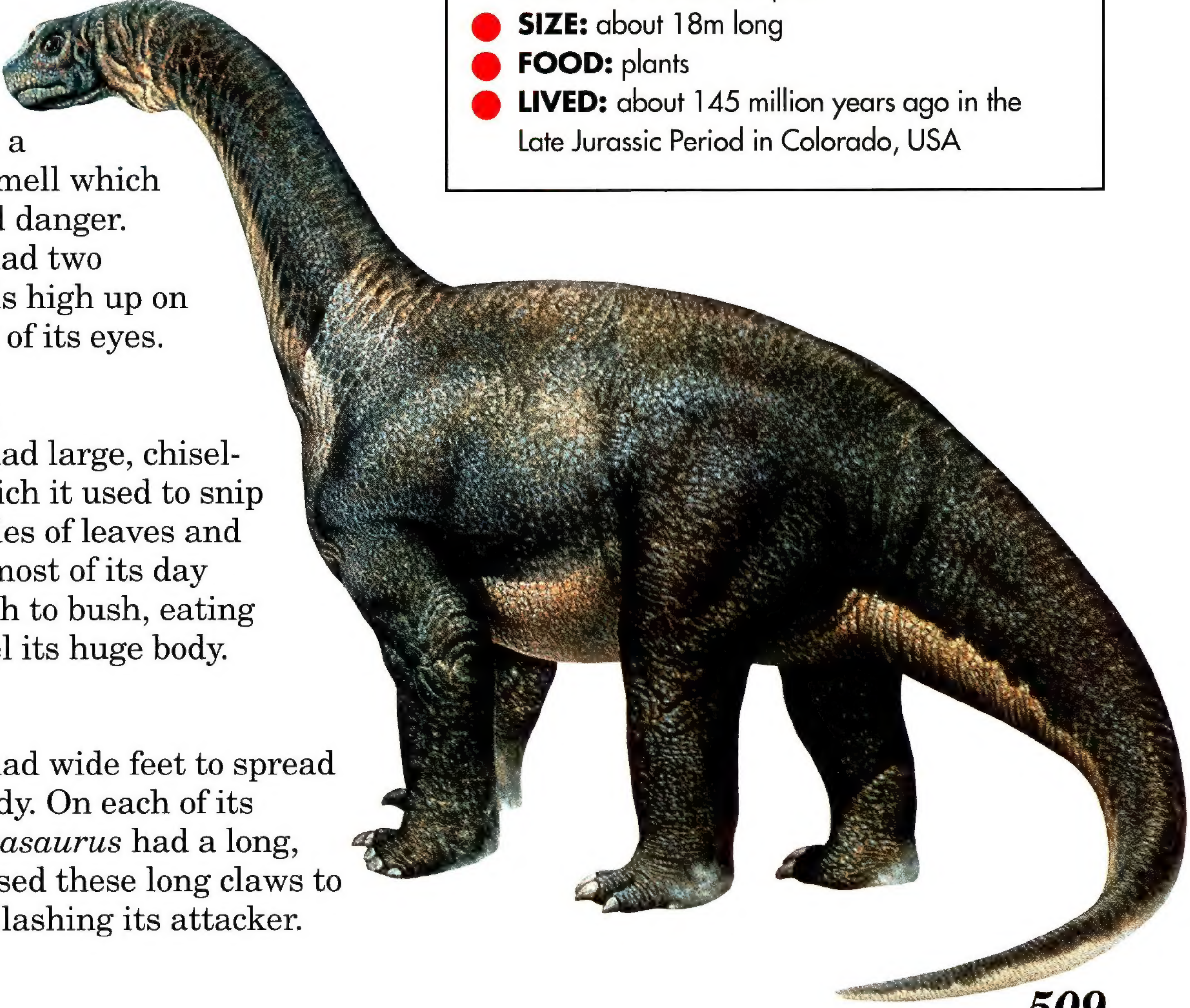
Inside its short, deep skull, *Camarasaurus* had a tiny brain. But it had a strong sense of smell which helped it to avoid danger. *Camarasaurus* had two enormous nostrils high up on its head, in front of its eyes.

### LOTS OF LEAVES

*Camarasaurus* had large, chisel-shaped teeth which it used to snip off great quantities of leaves and plants. It spent most of its day moving from bush to bush, eating lots of food to fuel its huge body.

### KICK BACK

*Camarasaurus* had wide feet to spread the load of its body. On each of its front feet *Camarasaurus* had a long, curved claw. It used these long claws to defend itself by slashing its attacker.



# Greenery for giants

**The dinosaurs of the Triassic Period lived among plants very different from those of today.**

Early dinosaurs had no grass to run through, no apples to eat, no roses to smell and no daisies to trample. The flowers that brighten our landscape were still far in the future.

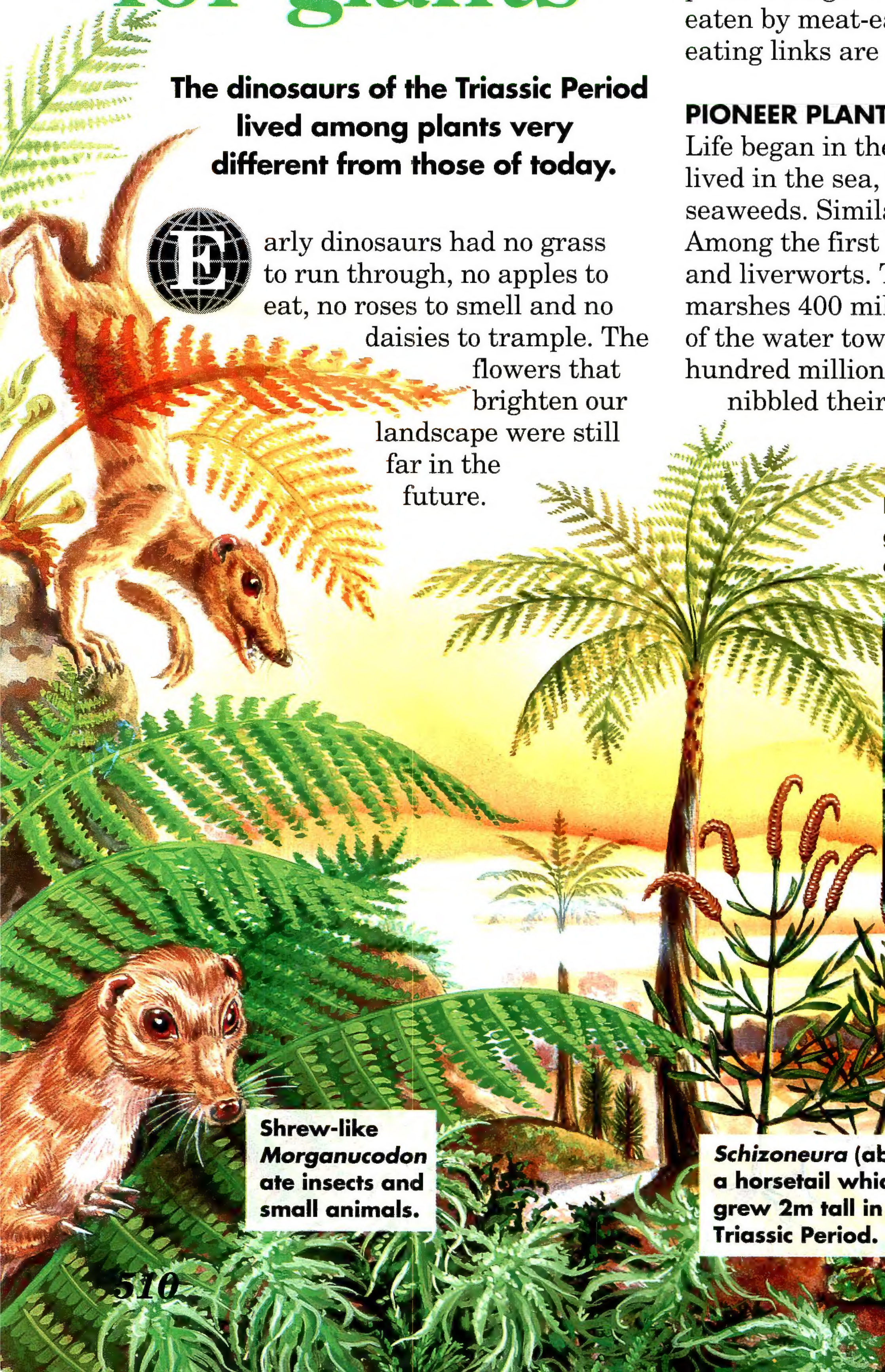
## LIFE-GIVING PLANTS

Dinosaurs were surrounded by plenty of lush green plants of other kinds. This was just as well, since many of them ate plants, and had gigantic appetites. In turn, these plant-eating animals were themselves eaten by meat-eating creatures. These eating links are called food chains.

## PIONEER PLANTS

Life began in the sea. The first plants lived in the sea, as microscopic algae or seaweeds. Similar plants are alive today. Among the first land plants were mosses and liverworts. They lived at the edges of marshes 400 million years ago, poking out of the water towards the sunshine. Two hundred million years later, dinosaurs nibbled their soft, spongy leaves for moisture and food.

Fleshy-leaved liverwort (below) grew before the dinosaurs, and is still around today.



Shrew-like *Morganucodon* ate insects and small animals.

*Schizoneura* (above), a horsetail which grew 2m tall in the Triassic Period.

## What is? A FOOD CHAIN

A food chain shows you who eats whom. Food chains start with plants, which make food by soaking up sunshine with their leaves. Plants use the food to grow and reproduce. Animals cannot make their own food. They eat plants, or other animals who have eaten plants. So, in the end, even the meat-eaters depend on plants. Today, a common food chain is: grass eaten by rabbit eaten by fox. Food chains were just the same in the Age of the Dinosaurs, but the plants and animals were different.

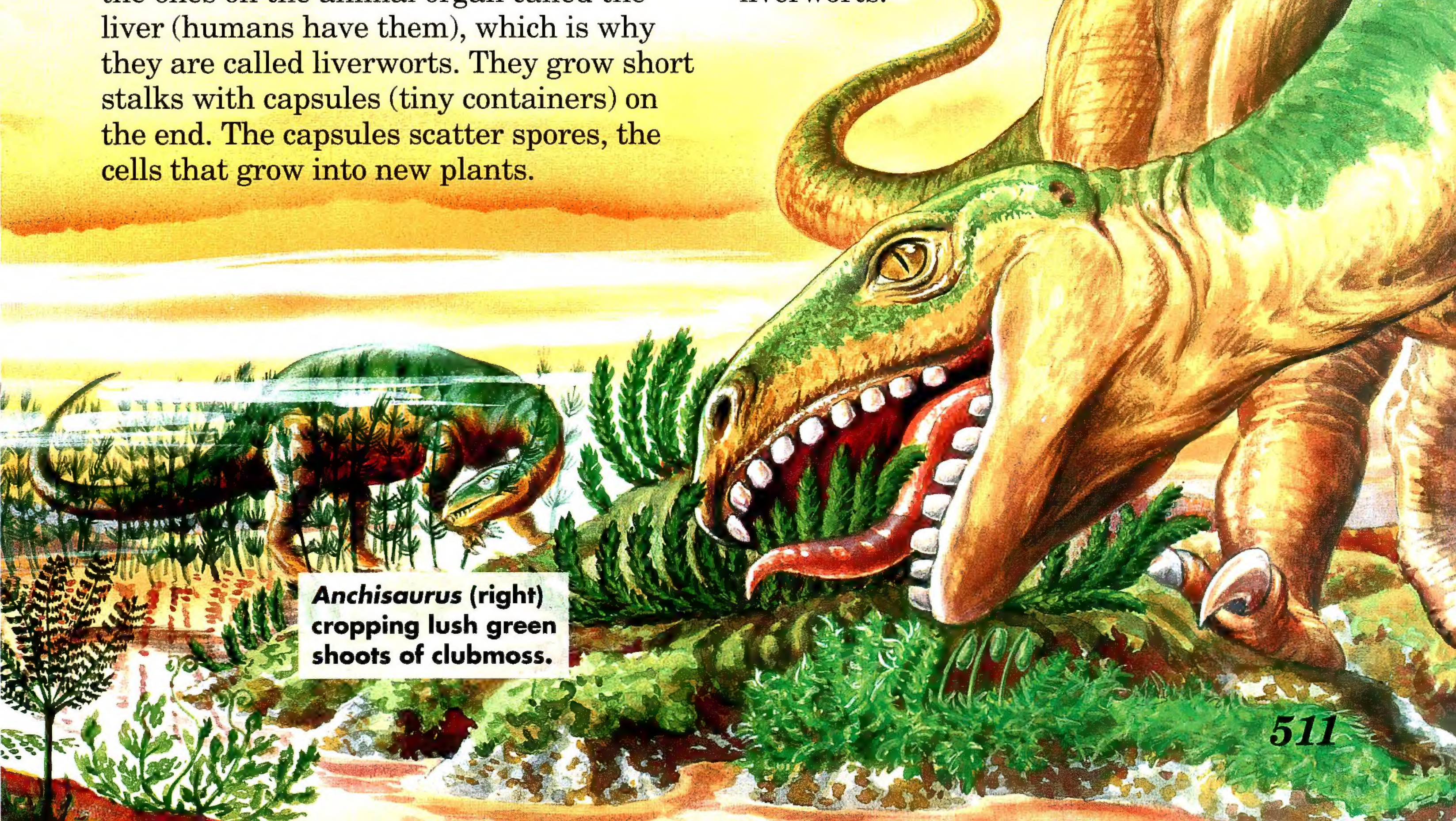
### LIVER LOBES

Mosses and liverworts are still around today. They only grow in moist places. If you look, you will find them growing along damp streambanks and around swampy lakesides, just as they did in the Age of the Dinosaurs. Liverworts have no proper stems or roots. They spread their flat, juicy leaves on the ground. These have lobes like the ones on the animal organ called the liver (humans have them), which is why they are called liverworts. They grow short stalks with capsules (tiny containers) on the end. The capsules scatter spores, the cells that grow into new plants.

**Triassic dinosaurs feasted on mosses which were very similar to modern mosses (above). Look for them in damp and boggy places beside streams.**

### AT HOME IN THE DAMP

Mosses have short stems covered with green scales. The stems are soft, so they cannot grow very tall. Hair-thin roots take in water. Like liverworts, they can only grow in moist places. The few fossils of these delicate plants show that they were very like today's mosses and liverworts.



***Anchisaurus* (right) cropping lush green shoots of clubmoss.**

***Plateosaurus* rears up on its back legs to reach a tasty tree-fern.**

## CHANGING PLANT LIFE

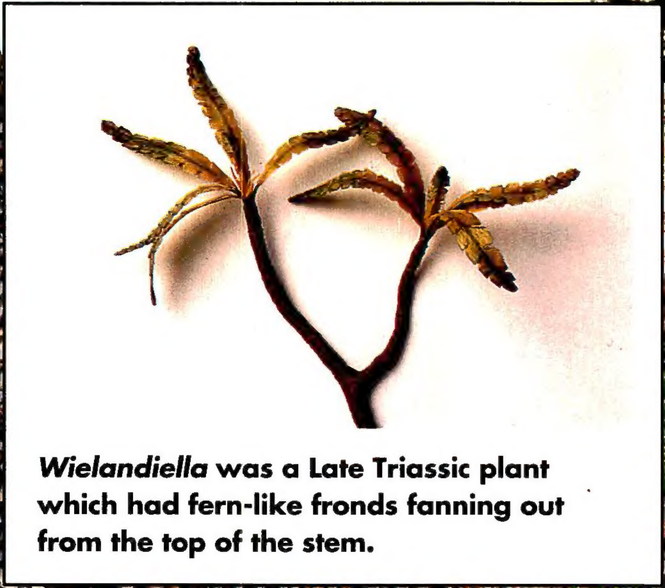
Before the Triassic Period, steamy forests of mosses, liverworts and giant ferns covered the land. During the Triassic the climate became drier. Plants had to find ways to reach the water in the soil deep below. And to grow higher towards the light, they developed strong, stiff stems.

## TUBES AND STEMS

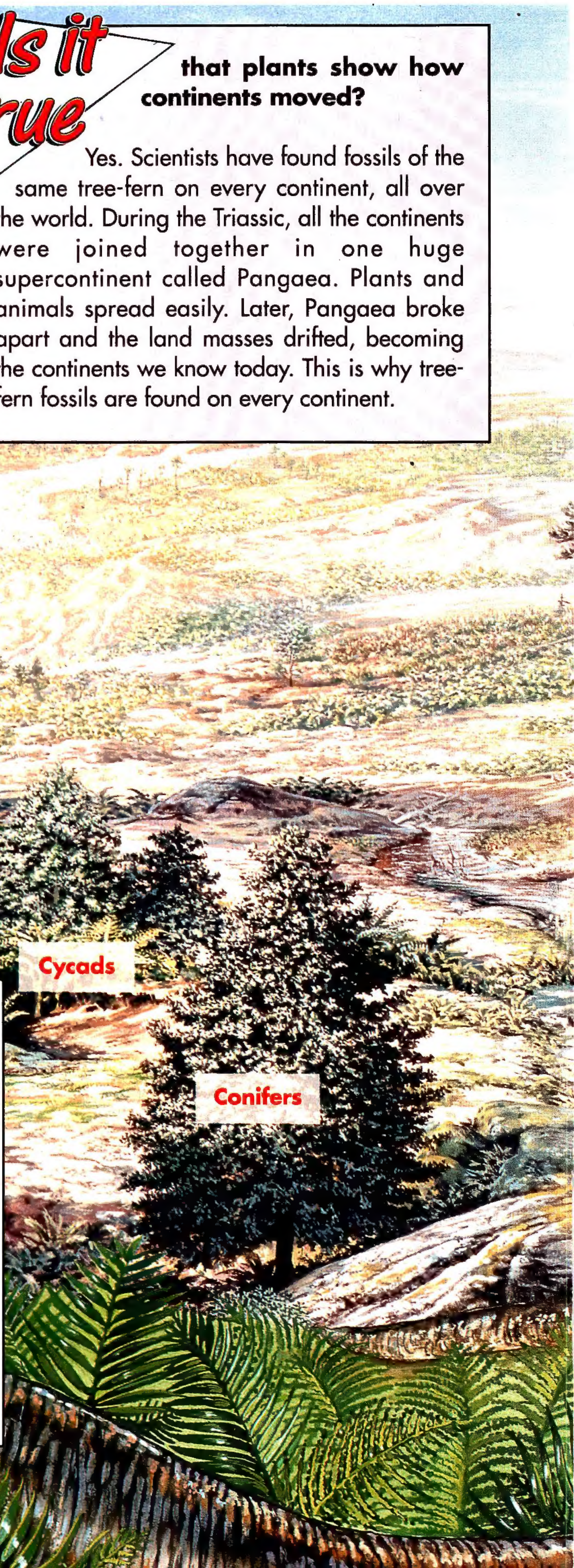
The first plants with stiff stems and water-carrying tubes were horsetails and clubmosses. Horsetails have rings of thin leaves which narrow at the top. Clubmosses are like large mosses with thick, stiff stems. Before the dinosaurs, these plants grew to giant size. They survived the Age of the Dinosaurs, though they became smaller as the climate became drier.

## Is it true that plants show how continents moved?

Yes. Scientists have found fossils of the same tree-fern on every continent, all over the world. During the Triassic, all the continents were joined together in one huge supercontinent called Pangaea. Plants and animals spread easily. Later, Pangaea broke apart and the land masses drifted, becoming the continents we know today. This is why tree-fern fossils are found on every continent.



***Wielandiella* was a Late Triassic plant which had fern-like fronds fanning out from the top of the stem.**

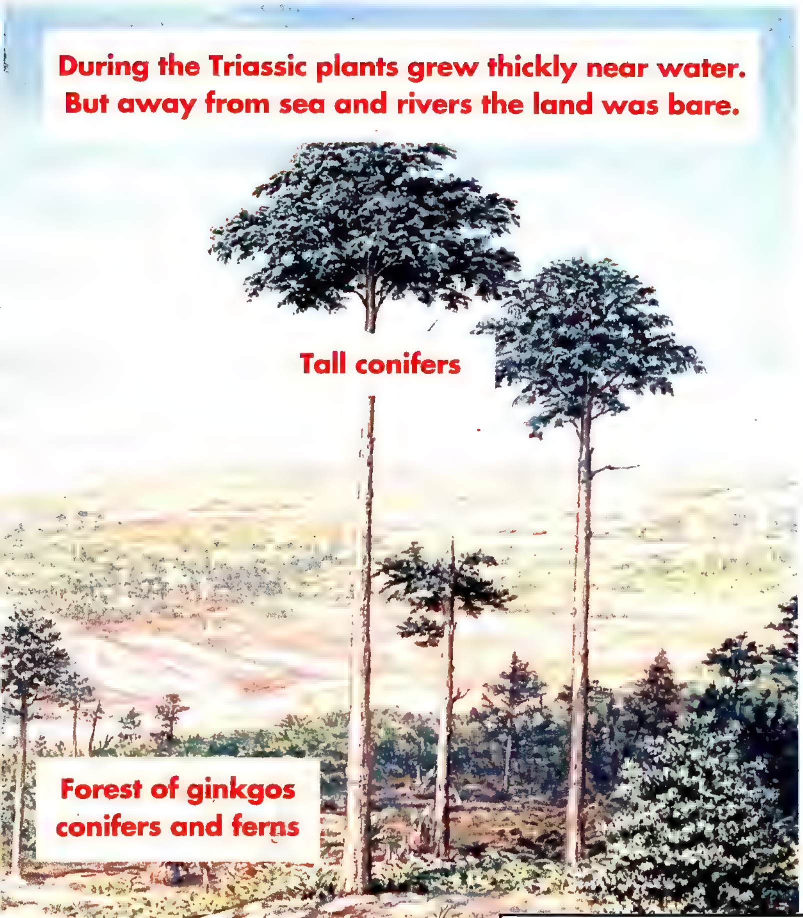


## A CHANGE OF SCENE

Ferns first appeared in the Devonian Period more than 350 million years ago. They became much more common during the Age of the Dinosaurs. Ferns had water-carrying tubes in their stiff stems, and finger-like fronds. Many kinds survive today. At first the ferns lived beneath the shady canopies of giant clubmosses and horsetails. Dinosaurs nipped off their soft young fronds and ate them hungrily.

## FERNS ON TREES

Tree-ferns grew much taller – sometimes as tall as 20m. During the Triassic Period they gradually replaced many of the giant clubmosses and horsetails of earlier, damper times. The tree-fern's woody trunk, which was part stem and part root, grew straight and unbranching. The leafy fronds spread out from the top in a lacy umbrella, like a modern palm tree. Dinosaurs who became too hot in the sun would cool off in the shade of tree-ferns.



During the Triassic plants grew thickly near water. But away from sea and rivers the land was bare.

Modern clubmoss plants are very much smaller than the giant clubmosses which grew before the Age of the Dinosaurs.

Out of the sun's heat, *Plateosaurus* (below) cools off with a snooze in the shade of ferns.

# GIANTS OF THE PAST

## TROODON

Another day in Cretaceous Canada draws to a close. As the moon rises, *Troodon* sets off on a night-time hunting trip. It had such good eyesight that it found it easy to spot these two tasty mammals. Although these furry creatures were fast, *Troodon* dashed after them on speedy, bird-like legs, grabbed them in its curved claws and crunched them with its needle teeth.

# 3-D Gallery

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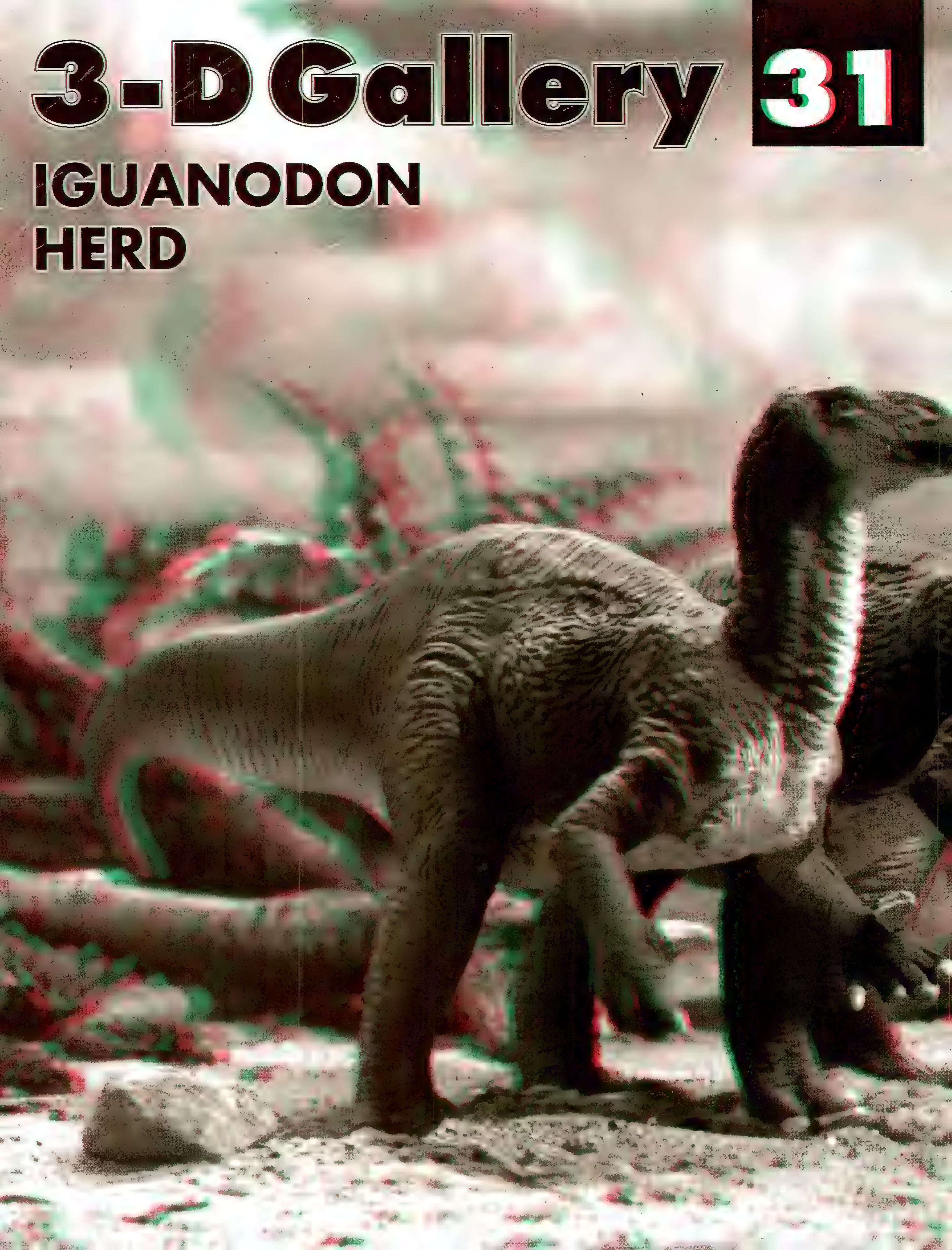
## IGUANODON HERD

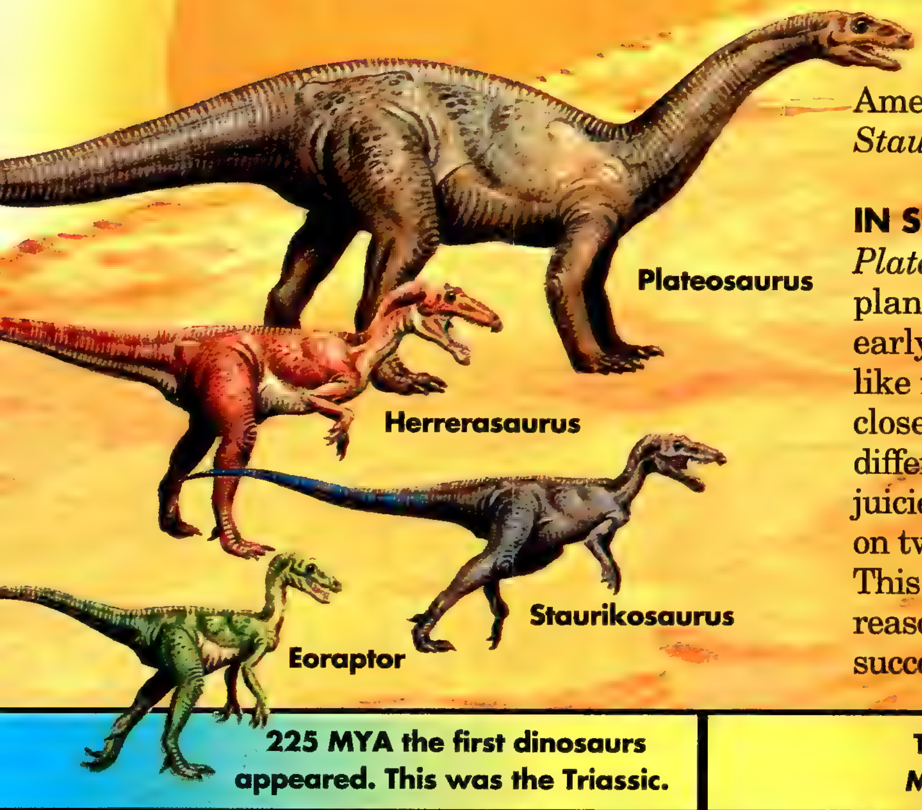


- A group of ornithopod dinosaurs
- Lived about 130 – 110 million years ago in Europe, North America and Asia
- Measured 10m long
- Ate plants

# The first and last

**Dinosaurs walked the Earth for 160 million years. Here are some of the earliest and latest.**

Look at this picture and imagine that the Age of the Dinosaurs was a very steep hill leading to the edge of a high cliff. At the dawn of the Dinosaur Age, 225 million years ago, the earliest dinosaurs began walking up the hill. The last dinosaurs reached the edge of the cliff 66 million years ago, just as the sun was setting – and peered down over the cliff edge to extinction.



## TWO EARLY GROUPS

The earliest dinosaurs can be divided into two groups: small to medium-sized meat-eaters, like *Eoraptor* and medium-sized plant-eaters (prosauropods). Prosauropods lived all over the world and paved the way for their relatives, the sauropods.

## NUMBER ONE

The earliest known meat-eater so far is *Eoraptor*. Its name means 'dawn thief' because it was alive at the dawn of the Dinosaur Age and may have been the earliest dinosaur.

## EARLY SOUTH AMERICANS

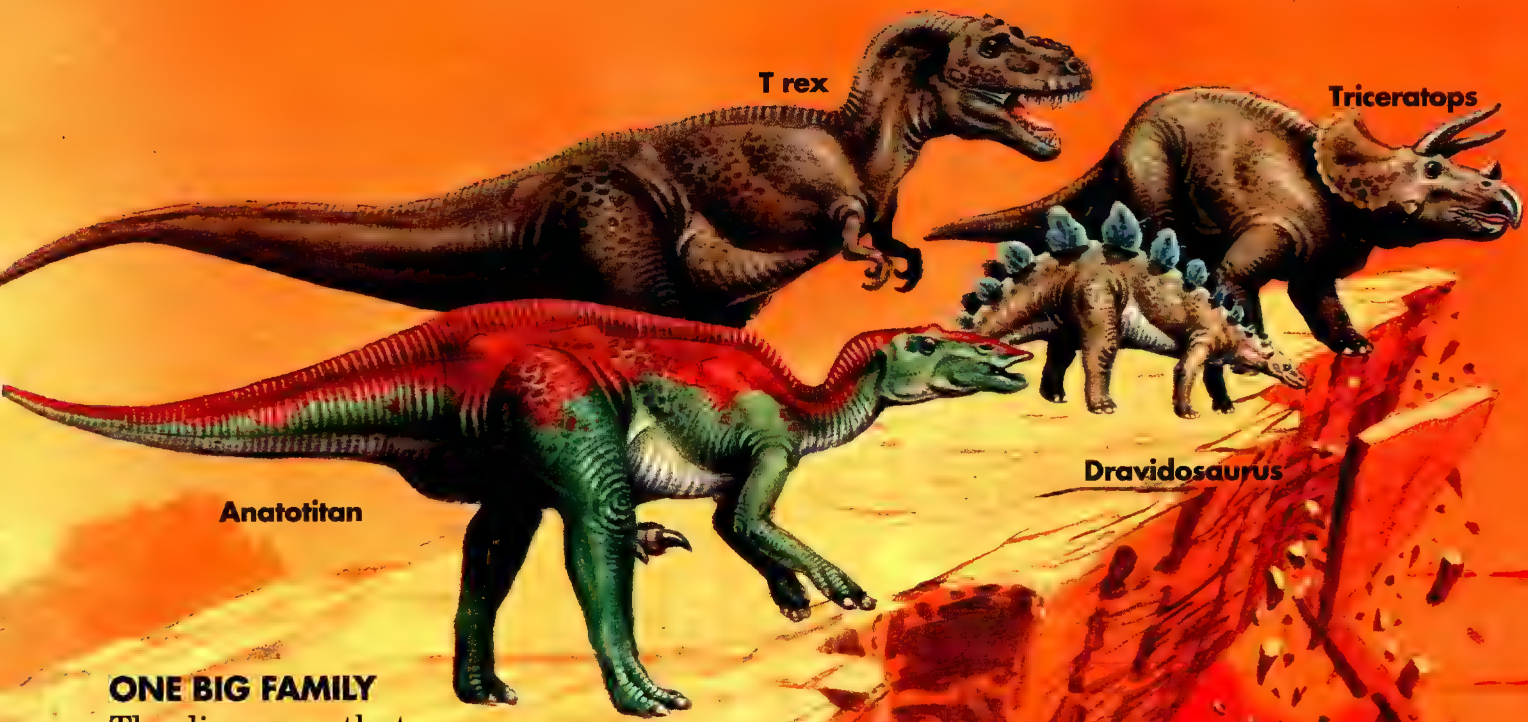
*Staurikosaurus* was another of the very earliest dinosaurs. It lived in Brazil and ran after mammal-like reptiles and lizards for its dinner. *Herrerasaurus,* another small meat-eater, was an early dinosaur too. It was also from South America, but was slightly heavier than *Staurikosaurus.*

## IN SEARCH OF GOOD FOOD

*Plateosaurus* was probably the first large plant-eater (6 – 8m long). Many other early plant-eaters, such as the mammal-like reptiles, carried their bodies quite close to the ground. *Plateosaurus* was different, it could take a good look at the juiciest leaves in the tree-tops by rearing up on two legs and stretching its long neck. This clever eating habit may have been the reason why this early dinosaur was so successful – it was quite common in Europe.

**225 MYA the first dinosaurs appeared. This was the Triassic.**

**The Jurassic lasted for 64 million years. Many dinosaurs lived during this period.**



## ONE BIG FAMILY

The dinosaurs that lived at the end of the Late Cretaceous Period were the last dinosaurs to walk the Earth. They came in many different shapes and sizes. In fact, the dinosaurs had become a very varied group of animals designed to cope with different habitats and lifestyles. This is why their extinction is such a mystery.

### Is it true that *Eoraptor*, one of the earliest known dinosaurs, was discovered in the Valley of the Moon?

Yes. *Eoraptor* was discovered in the Valley of the Moon, but this is not in outer space! It is a nickname given to an area in Argentina. It is such a bare, dry place that it looks like the surface of the moon. It was probably a dry place 225 million years ago when *Eoraptor* lived there. In the wet season when rain fell, vegetation would have sprung up around waterholes.

## T REX – THE SURVIVOR

*T rex* survived right up until 66 million years ago. It is not surprising that this massive killer survived for so long – it was well-equipped to look after itself. Perhaps it preyed on *Anatotitan*, another of the very last dinosaurs. *Anatotitan* was one of the last of the peaceful duckbilled dinosaurs to chomp its way across North America.

## SOLE SURVIVOR

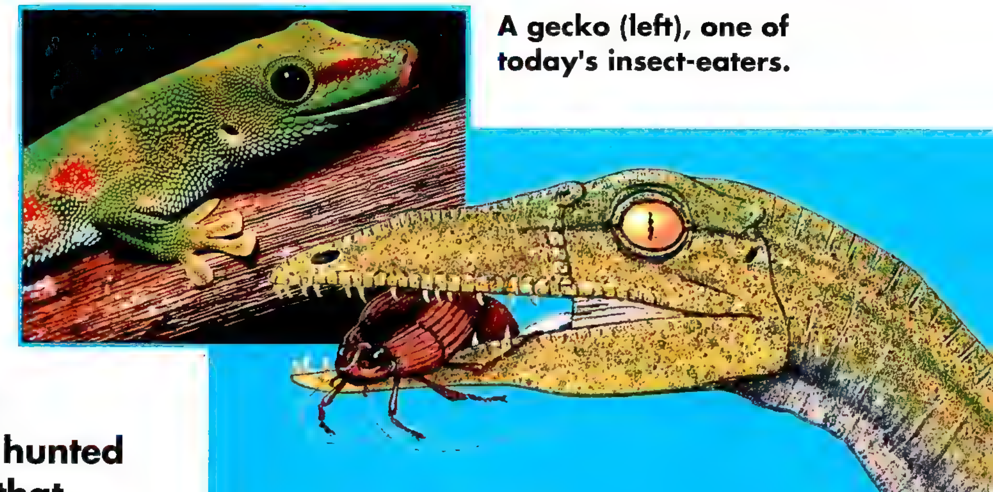
By the end of the Cretaceous all the dinosaurs with pointed bony plates on their backs (the stegosaurs) had disappeared – except one, *Dravidosaurus*, which lived in India. Meanwhile, in what is now North America, *Triceratops* was the last horned dinosaur. Fossil records show us that all the other members of its family had died out about 7 million years earlier.

**The Cretaceous ended 66 MYA, which is when the dinosaurs died out.**

# Insect-eaters

**Not all meat-eaters ate other dinosaurs. The smaller types hunted some of the tiniest creatures that shared their world.**

Insects were an important part of the diet of some of the smallest, quickest and lightest meat-eating dinosaurs.



A gecko (left), one of today's insect-eaters.

### SHARP AND SPIKY

*Compsognathus* was about the size of a cockerel. It had a slender jaw and tiny spiky teeth for cracking open the tough outer skin of beetles. Modern lizards, such as geckos, have similar teeth, keen eyesight and agile bodies. They eat insects just as *Compsognathus* did.

### LIGHT BONES

The earliest small hunting dinosaurs lived in Late Triassic times. They are known as 'hollow forms', because of their light, hollow bones. *Saltopus*, at about 60cm long, was one of the tiniest hollow forms.

### SMALL AND SPEEDY

At just over 1m long, *Procompsognathus* was a bit bigger than *Saltopus*. Both were fast movers, chasing after insects on their long back legs. Another tiny insect-eater was *Compsognathus,* which lived in the Late Jurassic. It was about the same size and build as *Saltopus*.

### THEN AND NOW

Many of the insects we know today were hunted by small meat-eating dinosaurs. Dragonflies darted about in the skies 320 million years ago. Cockroaches have lived on the Earth since long before the Age of the Dinosaurs. Beetles also scuttled about in the undergrowth.

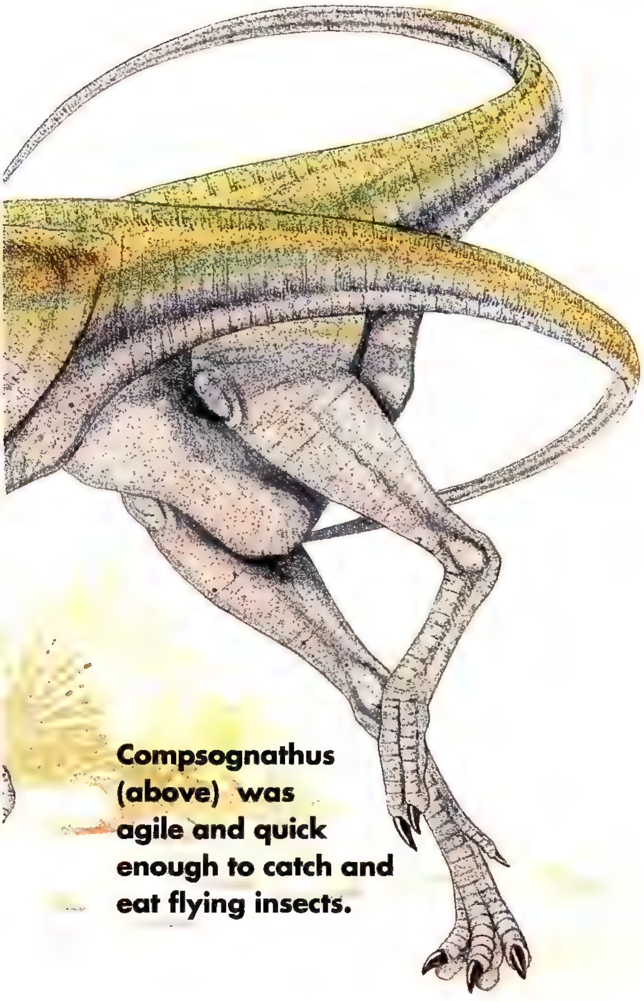
This fossil dragonfly is 140 million years old.

## Is it true that insect-eating dinosaurs only ate insects?

Small, hunting dinosaurs did not just eat insects. The fossilized skeleton of a lizard was found in the stomach of a *Compsognathus* skeleton. It was a fast-moving type of lizard. So it proved that *Compsognathus* must have had excellent eyesight, good acceleration and quick reactions to have caught it.

### ON THE LOOK-OUT

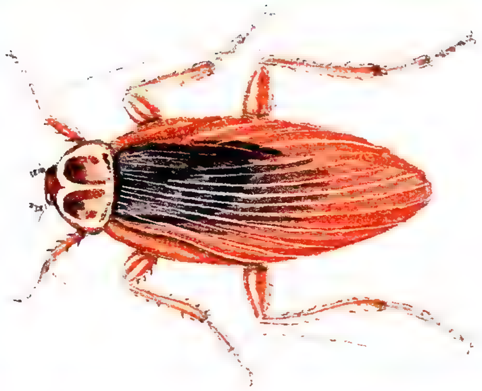
Insects are often hard to see and they move about very quickly. Dinosaurs needed good eyesight and quick reactions to catch them. Modern insect-eaters have well-developed senses of sight and smell. Dinosaur insect-eaters would have needed the same things to make them successful insect hunters.



**Compsognathus (above) was agile and quick enough to catch and eat flying insects.**

### PREY PROFILE

***Compsognathus'* spiky teeth would have made short work of this dragonfly.**



**A cockroach made a crunchy mouthful for *Saltopus* or *Procompsognathus*.**

**The first scorpions were scuttling around 380 million years ago.**

# Insect-eaters in action

***Archaeopteryx*, the first bird, used its wings to chase flying insects, and also ran after them on the ground.**

**How did small dinosaurs catch their prey? Looking at modern insect-eaters may give us some of the answers.**

Studying today's lizards and chameleons may help us to understand more about the tiny dinosaur hunters like *Compsognathus.*

**SURPRISE, SURPRISE**

Not all insect-eaters run after their prey. A chameleon creeps up on its victim and takes it by surprise. The tip of its long tongue sticks to the insect. A chameleon's eyes bulge out from its head and each eye can move by itself. That means it can watch two different insects at the same time. Chameleons can also change their colour patterns, or camouflage themselves, to blend into the background. Perhaps some of the dinosaur insect-eaters behaved like today's chameleons.

**A chameleon catches an unwary locust on the end of its sticky tongue.**

**LIZARD-LIKE**

Lizards are the largest group of living reptiles and very successful insect hunters. They catch their prey in lots of different ways. Most move on all fours, but some desert lizards rear up on their hind legs to run after insects. They use their tails for balance. Dinosaur insect-eaters probably moved in the same way.

**TREE CLIMBERS**

Geckos climb trees to catch insects. Their toes are covered with tiny hooks to help them cling better. Some of the dinosaur insect-eaters may also have scuttled up trees after their prey.

## LIFT OFF

Some insect-eaters in the Dinosaur Age took to the air to hunt their prey. The fossil bird *Archaeopteryx* lived at the same time as *Compsognathus*. Like *Compsognathus,* it hunted insects. But it not only ran after them, it also fluttered up off the ground to catch them.

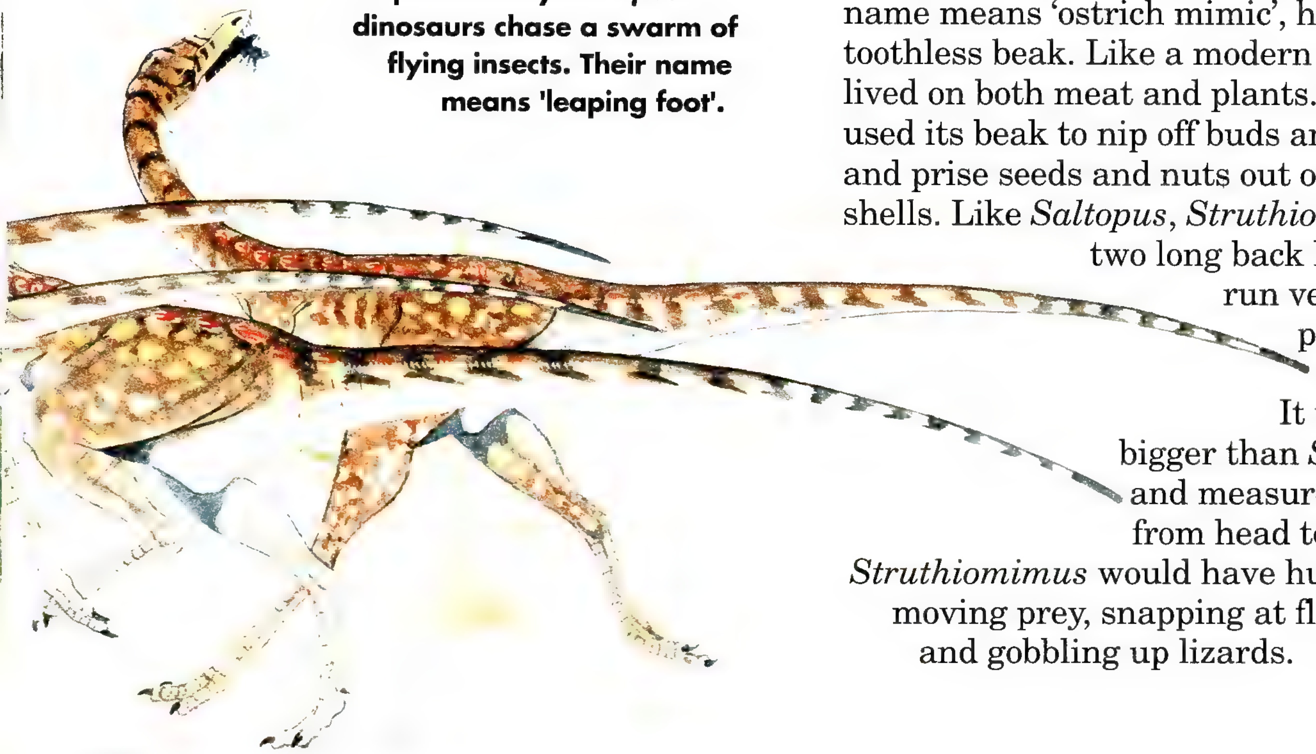
***Struthiomimus* looked rather similar to a modern ostrich, and could run fast enough to catch flying insects.**

## DRAGONS OF THE AIR

*Pterodactylus* was a pterosaur, not a dinosaur, but it had the same light, hollow bones as *Compsognathus*. It also had spiky teeth, quick reactions and sharp eyesight which meant that it could catch and eat insects. This flying reptile lived at the same time as *Compsognathus* and was about the size of a seagull.

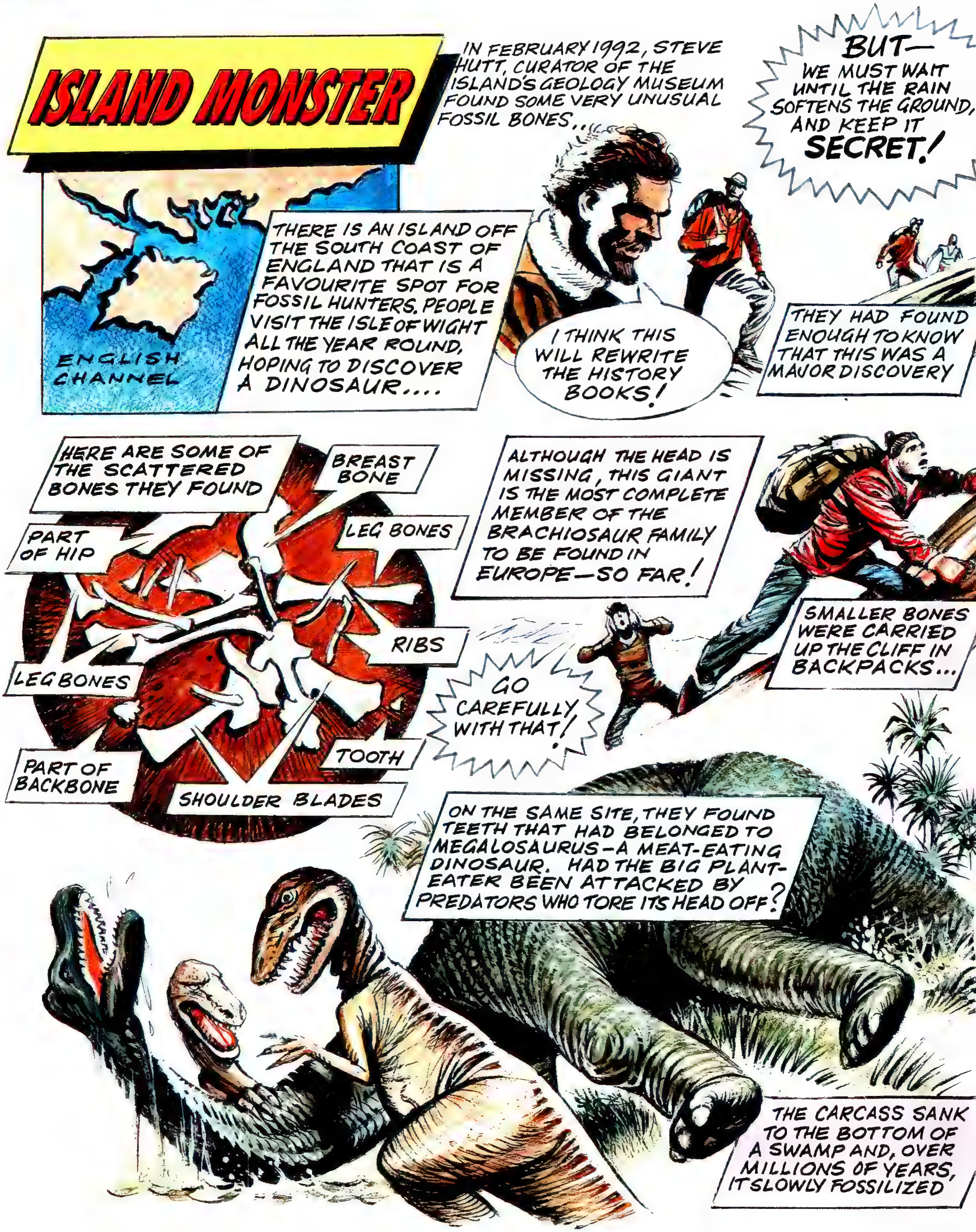
## TOOTHLESS TERROR

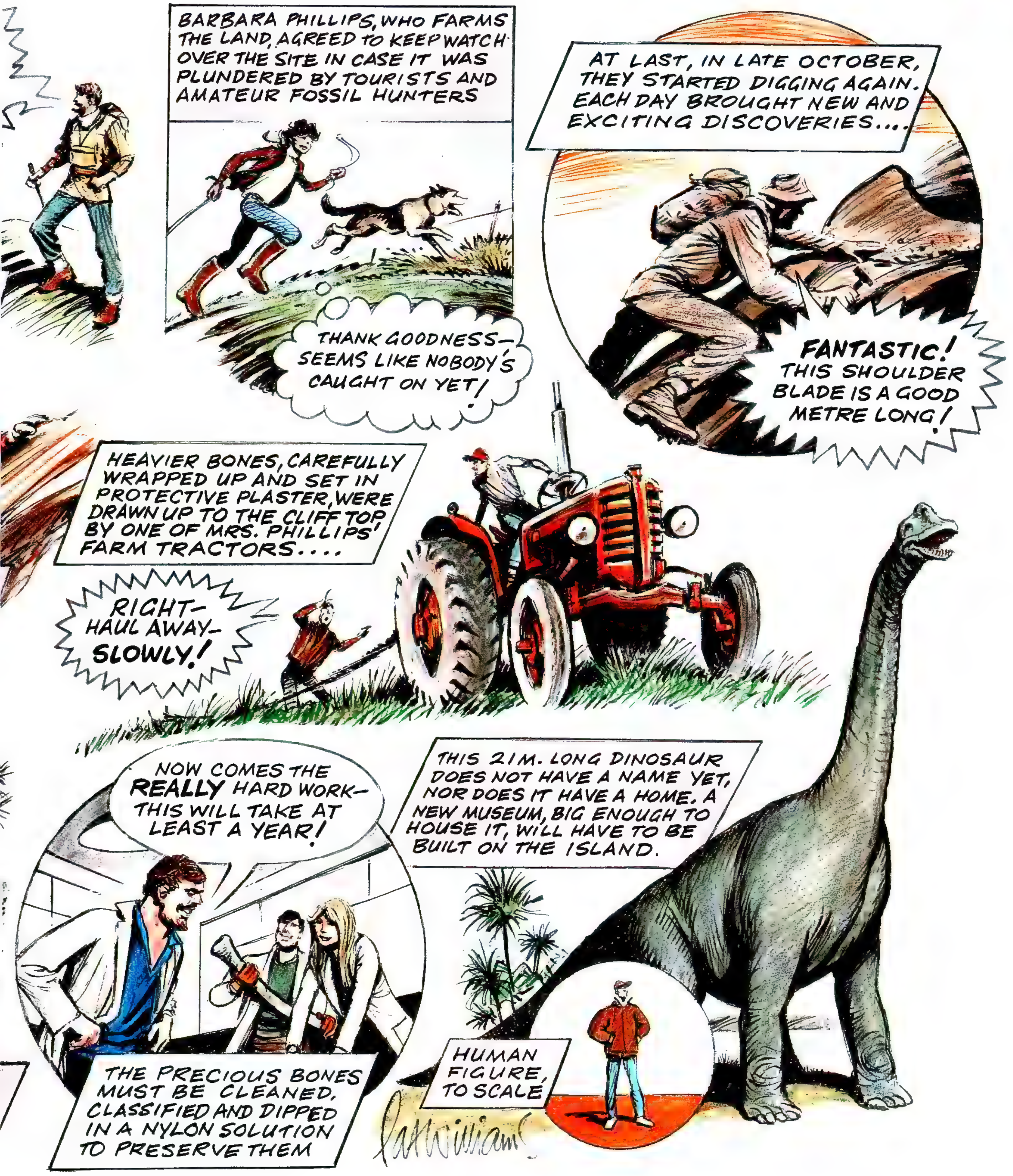
Not all insect-eating dinosaurs had teeth. The larger hunter *Struthiomimus,* whose name means 'ostrich mimic', had a toothless beak. Like a modern ostrich, it lived on both meat and plants. It probably used its beak to nip off buds and berries, and prise seeds and nuts out of their shells. Like *Saltopus*, *Struthiomimus* had two long back legs. It could run very fast – perhaps up to 40km/h. It was much bigger than *Saltopus*, and measured 3.5m from head to toe. *Struthiomimus* would have hunted fast-moving prey, snapping at flying insects and gobbling up lizards.



**A pack of tiny *Saltopus* dinosaurs chase a swarm of flying insects. Their name means 'leaping foot'.**

# ISLAND MONSTER


IN FEBRUARY 1992, STEVE HUTT, CURATOR OF THE ISLAND'S GEOLOGY MUSEUM FOUND SOME VERY UNUSUAL FOSSIL BONES...
THERE IS AN ISLAND OFF THE SOUTH COAST OF ENGLAND THAT IS A FAVOURITE SPOT FOR FOSSIL HUNTERS. PEOPLE VISIT THE ISLE OF WIGHT ALL THE YEAR ROUND, HOPING TO DISCOVER A DINOSAUR....
ENGLISH CHANNEL
I THINK THIS WILL REWRITE THE HISTORY BOOKS!
BUT— WE MUST WAIT UNTIL THE RAIN SOFTENS THE GROUND, AND KEEP IT SECRET!
THEY HAD FOUND ENOUGH TO KNOW THAT THIS WAS A MAJOR DISCOVERY
HERE ARE SOME OF THE SCATTERED BONES THEY FOUND
BREAST BONE
PART OF HIP
LEG BONES
RIBS
LEG BONES
PART OF BACKBONE
TOOTH
SHOULDER BLADES
ALTHOUGH THE HEAD IS MISSING, THIS GIANT IS THE MOST COMPLETE MEMBER OF THE BRACHIOSAUR FAMILY TO BE FOUND IN EUROPE—SO FAR!
SMALLER BONES WERE CARRIED UP THE CLIFF IN BACKPACKS...
GO CAREFULLY WITH THAT!
ON THE SAME SITE, THEY FOUND TEETH THAT HAD BELONGED TO MEGALOSAURUS—A MEAT-EATING DINOSAUR. HAD THE BIG PLANT-EATER BEEN ATTACKED BY PREDATORS WHO TORE ITS HEAD OFF?
THE CARCASS SANK TO THE BOTTOM OF A SWAMP AND, OVER MILLIONS OF YEARS, IT SLOWLY FOSSILIZED


BARBARA PHILLIPS, WHO FARMS THE LAND, AGREED TO KEEP WATCH OVER THE SITE IN CASE IT WAS PLUNDERED BY TOURISTS AND AMATEUR FOSSIL HUNTERS
THANK GOODNESS— SEEMS LIKE NOBODY'S CAUGHT ON YET!
AT LAST, IN LATE OCTOBER, THEY STARTED DIGGING AGAIN. EACH DAY BROUGHT NEW AND EXCITING DISCOVERIES....
FANTASTIC! THIS SHOULDER BLADE IS A GOOD METRE LONG!
HEAVIER BONES, CAREFULLY WRAPPED UP AND SET IN PROTECTIVE PLASTER, WERE DRAWN UP TO THE CLIFF TOP BY ONE OF MRS. PHILLIPS' FARM TRACTORS....
RIGHT— HAUL AWAY— SLOWLY!
NOW COMES THE REALLY HARD WORK— THIS WILL TAKE AT LEAST A YEAR!
THE PRECIOUS BONES MUST BE CLEANED, CLASSIFIED AND DIPPED IN A NYLON SOLUTION TO PRESERVE THEM
THIS 21M. LONG DINOSAUR DOES NOT HAVE A NAME YET, NOR DOES IT HAVE A HOME. A NEW MUSEUM, BIG ENOUGH TO HOUSE IT, WILL HAVE TO BE BUILT ON THE ISLAND.
HUMAN FIGURE, TO SCALE

Improve and test your knowledge with...

# DINO Fact File

Follow the footprints to complete the quiz and get to the bottom of the question!

**1** What did *Torosaurus* eat?
a) other dinosaurs
b) small animals and insects
c ) plants

**2** What does *Troodon* mean?
a) big brain
b) saucer eyes
c ) wounding tooth

### Spear-like teeth

*Rhamphorhynchus*, an early type of pterosaur, had a very effective weapon to spear fish with. Its teeth were shaped like fishing spears used by Amazonian Indian tribes of South America today.

**6** Dinosaurs did not eat:
a) grass
b) moss
c ) liverwort

**7** Why was *Eoraptor* called 'dawn thief'?
a) it was one of the first dinosaurs
b) it stole eggs in the morning
c ) it was an early riser

**8** Where did *Camarasaurus* have a long, curved claw?
a) at the end of its tail
b) on the tip of its nose
c ) on its front foot

**9** What does *Hylaeosaurus* mean?
a) helium balloon lizard
b) woodland reptile
c ) hello reptile

### The great dinosaur discovery race

The USA holds the record for dinosaur discoveries with 107. Close behind is China with 95. Great Britain is fifth with 44 dinosaur discoveries. (PS – the race is still on as new dinosaurs are being found all the time!)

**10** How big was *Torosaurus*' skull compared with a human's?
a) 17 times bigger
b) 13 times bigger
c ) 9 times bigger

**3** How large was a *Hypselosaurus* egg?

a) the size of a hen's egg
b) bigger than an ostrich's egg
c) the size of a robin's egg

## Facts and figures

Put your thinking cap on! The last dinosaurs to roam the Earth were separated from modern day animals by a mere 66 million years. The gap in time between the very earliest dinosaurs and the last dinosaur is much larger – around 150 million years!

**4** Near which dinosaur's nest did *Troodon* lay its eggs?

a) *Oviraptor*
b) *Orthomerus*
c) *Orodromeus*

**5** Which dinosaur's teeth were found with the sauropod discovered on the Isle of Wight?

) *Troodon*
) *Megalosaurus*
) *Tyrannosaurus rex*

## Fairytale bones

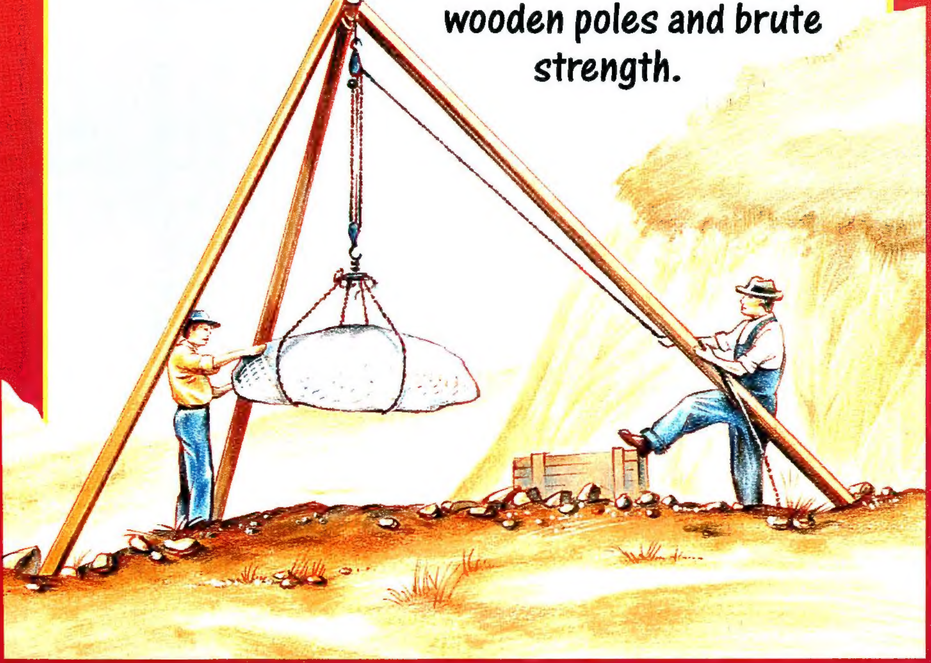
Megalosaurus was first described in the 1820s as an 'ancient lizard', but a bone of this famous dinosaur was found as early as 1676. The fossil was sent to scientist Robert Plot, who believed that it belonged to a giant human!

## Jigsaw puzzles

Putting together the pieces of a dinosaur fossil is no easy task. When some leg bones and part of a skull were uncovered, scientists thought they all belonged to an armoured dinosaur called Scelidosaurus. But it turned out that the leg bones came from a totally different dinosaur!

## Sheer muscle power

A hundred years ago there were no machines like cranes or helicopters to move large slabs of rock containing dinosaur bones. Scientists on a dig used hoists and muscle power. A team working in Red Deer Valley, Canada in the 1900s lifted huge dinosaur bones using only a rope, wooden poles and brute strength.



Answers to the questions on inside back cover

### HULSANPES 75 MYA

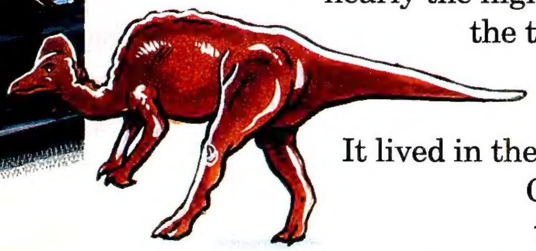
*Hulsanpes* (hull-san-pez) lived in Mongolia in the Late Cretaceous Period. Everything we know about this tiny meat-eating dinosaur is based on the fossilized bones of part of its hind foot. *Hulsanpes* means 'foot from Khulsan'.

### HYLAEOSAURUS 130 MYA

*Hylaeosaurus* (hy-lee-oh-saw-rus) was the third dinosaur to be given a name. This plant-eater lived in Tilgate Forest in southern England during the Early Cretaceous Period. Armoured *Hylaeosaurus* was as long as two small cars and walked on four legs. It probably had sharp spines along the sides of its body and lay flat on the ground when attacked by predators. *Hylaeosaurus* means 'woodland reptile'.

### HYPACROSAURUS 75 MYA

*Hypacrosaurus* (hie-pak-roe-saw-rus) was a duckbilled dinosaur almost as long as a double-decker bus. *Hypacrosaurus* means 'nearly the highest reptile'. At the top of its short skull it had a rounded crest. It lived in the Cretaceous in Canada and the USA.

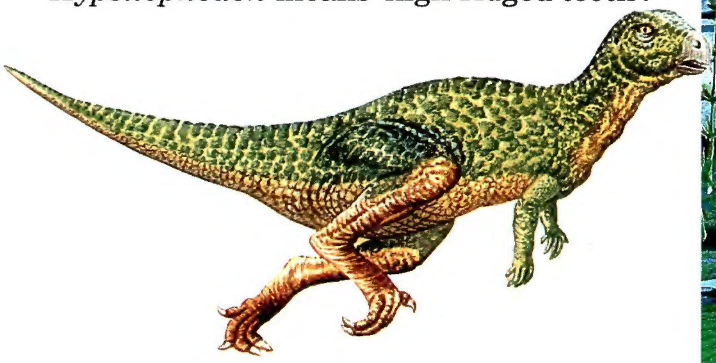


### HYPSELOSAURUS 75 MYA

*Hypselosaurus* (hip-sel-oh-saw-rus) means 'highest reptile'. It was as long as the net across a tennis court and more than three times the height of an adult human. Fossils of long-necked *Hypselosaurus* were found in France in the same place as some amazing eggs which were bigger than ostrich eggs. Experts have found fossils that prove that *Hypselosaurus* lived in northern Spain and southern France during the Late Cretaceous Period.

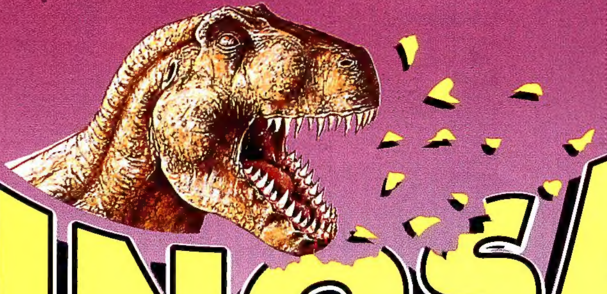
### HYPSILOPHODON 115 MYA

Fast-running *Hypsilophodon* (hip-see-loaf-oh-don) lived in the forests of southern England, Portugal and the USA during the Early Cretaceous Period. It was about as long as a leopard with a goat-shaped head. *Hypsilophodon* strode along on two legs, with its tail held out stiffly behind. It had long thin feet and sharp claws that may have been used for tearing and scratching. It fed on plants, nipping off shoots with its curved, toothless beak. At the back of its mouth it had self-sharpening teeth. *Hypsilophodon* means 'high-ridged tooth'.

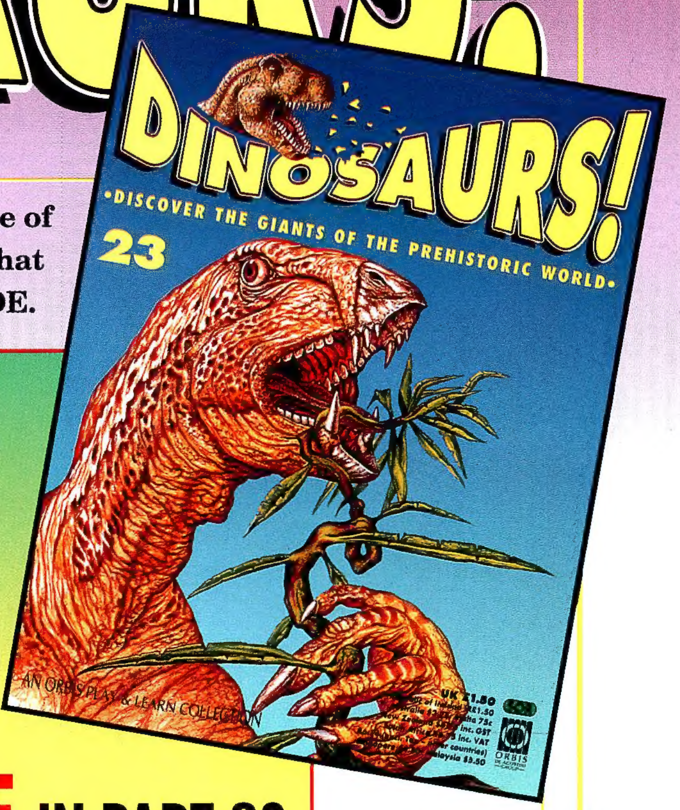


**MYA = MILLION YEARS AGO**

## COMING IN PART 23 OF



# DINOSAURS!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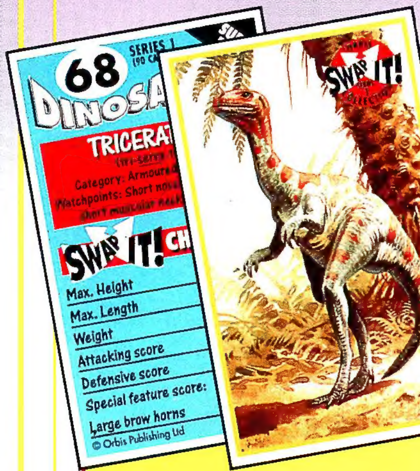

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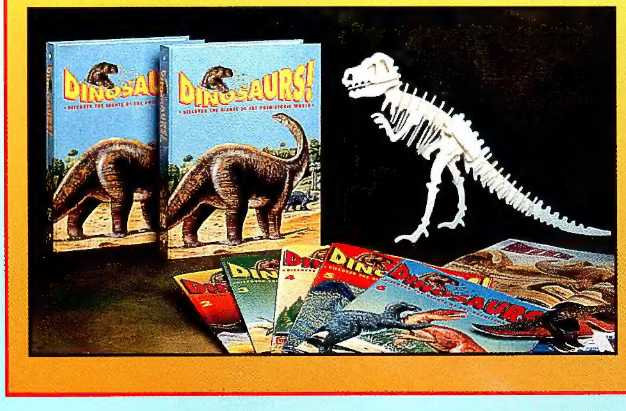

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**ANSWERS TO DINO FACT FILE QUESTIONS:** 1.c 2.c 3.b 4.c 5.b 6.a 7.a 8.c 9.b 10.b

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# ASK THE EXPERT

**Dr. David Norman of Cambridge University answers your dinosaur questions**

## Were there more plant-eating dinosaurs than meat-eaters?

As far as we know, there were far more plant-eating dinosaurs than meat-eaters. There are two reasons for thinking this. First, more fossils of plant-eaters have been found. Second, if we look at living animals, we find that there are far more plant-eaters than meat-eaters.

## Did baby dinosaurs die?

A very sad question. Yes, I am sure that if baby dinosaurs became ill, or were attacked by their enemies, they would have died very quickly. Just like animals in the wild today, the youngest and the oldest dinosaurs in a group were more at risk from danger. This was because they were much weaker than the adult dinosaurs.

## Which dinosaur had the smallest teeth?

*Echinodon* probably had the smallest teeth. This was a tiny fabrosaurid (a relative of *Lesothosaurus*) which lived in Early Cretaceous times in Dorset, England. It had teeth that were barely 1mm wide, which is the size of half an ant!

## Which dinosaur had the most relatives?

The dinosaur with the most relatives was discovered in Argentina in 1992. *Eoraptor* is the earliest known dinosaur. It was a small, meat-eating animal that lived 225 million years ago. It must have been related to almost all later meat-eating dinosaurs.

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